

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior listings of claims in the application.

1. (Currently amended) A method comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy,

~~evacuating a hydrogen storage tank, and~~

connecting the activation vessel to a hydrogen storage tank via a valve disposed on the activation vessel,

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank via the valve without substantially exposing the powdered ~~powered~~ hydrogen-absorbing alloy to oxygen, and

transferring the valve from the activation vessel to the hydrogen storage tank when the powdered hydrogen-absorbing alloy is transferred to the hydrogen storage tank from the activation vessel.

2. (Original) A method according to claim 1, wherein the hydrogen-absorbing alloy is ingot-shaped and the substantially powdered hydrogen-absorbing alloy is produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume expansion caused by the hydrogen-absorbing alloy absorbing hydrogen.

3. (Original) A method according to claim 1, further comprising cooling the hydrogen-absorbing alloy within the activation vessel and then introducing high-pressure hydrogen to the cooled hydrogen-absorbing alloy.

4. (Currently amended) A method ~~according to claim 1~~, comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy, wherein the hydrogen gas introduced into the activation vessel has a pressure of about 0.5 – 10 MPa and a temperature of between about 20 – 60°C,

evacuating a hydrogen-storage tank, and

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen.

5. (Cancelled)

6. (Currently amended) A method according to claim 1 ~~[[5]]~~, wherein the valve comprises a ball valve ~~disposed on the activation vessel.~~

7-8. (Cancelled)

9. (Currently amended) A method ~~according to claim 8, further~~ comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy,

evacuating a hydrogen-storage tank,

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank via the valve without substantially exposing the powdered hydrogen-absorbing alloy to oxygen,

affixing a flat lid to the top of the hydrogen storage tank, thereby defining a ceiling portion of the hydrogen storage tank, after the powdered hydrogen-absorbing alloy has been transferred to the hydrogen storage tank, and

continuously supplying an an ~~[[the]]~~ inert gas to the hydrogen storage tank when the flat lid

is being affixed to the hydrogen storage tank.

10. (Cancelled)

11. (Original) A method according to claim 1, further comprising storing hydrogen as absorbed hydrogen within the powdered hydrogen-absorbing alloy disposed within the hydrogen storage tank.

12. (Original) A method according to claim 1, wherein the hydrogen absorbing alloy comprises titanium and vanadium and has a body centered cubic (BCC) structure.

13. (Original) A method according to claim 12, wherein the hydrogen gas contacts the hydrogen absorbing alloy at a pressure of about 0.5 – 10 MPa and a temperature of between about 20 – 60°C.

14. (Currently amended) A method according to claim 13, further comprising:

cooling the hydrogen-absorbing alloy within the activation vessel and then introducing relatively high-pressure and low temperature hydrogen to the cooled hydrogen-absorbing alloy, wherein the hydrogen-absorbing alloy is ingot-shaped and the substantially powdered hydrogen-absorbing alloy is produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume expansion caused by the hydrogen-absorbing alloy absorbing hydrogen, ~~and wherein the substantially powdered hydrogen-absorbing alloy is transferred from the activation vessel to the hydrogen storage tank by connecting the activation vessel to the hydrogen storage tank via a ball valve disposed on the activation vessel.~~

15 to 18. (Cancelled)

19. (Previously presented) A method according to claim 14, further comprising storing hydrogen as absorbed hydrogen within the powdered hydrogen-absorbing alloy disposed within the hydrogen storage tank.

20 to 29. (Cancelled)

30. (Currently amended) A method ~~according to claim 29, further~~ comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy,

filling the hydrogen-storage tank with an inert gas,

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen,

affixing a flat lid to the top of the hydrogen storage tank, thereby defining a ceiling portion of the hydrogen storage tank, after the powdered hydrogen-absorbing alloy has been transferred to the hydrogen storage tank, and

continuously supplying an [[the]] inert gas to the hydrogen storage tank when the flat lid is being affixed to the hydrogen storage tank.

31 and 32. (Cancelled)

33. (Currently amended) A method ~~according to claim 32, further~~ comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel, wherein the hydrogen absorbing alloy comprises titanium and vanadium and has a body centered cubic (BCC) structure,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy, wherein the hydrogen gas contacts the hydrogen absorbing alloy at a pressure of about 0.5-10 MPa and a temperature of between about 20-60°C,

filling the hydrogen-storage tank with an inert gas, and

transferring the substantially powdered hydrogen-absorbing alloy from the activation

vessel to the hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen.

34. (Previously presented) A method according to claim 33, further comprising:

cooling the hydrogen-absorbing alloy within the activation vessel and then introducing relatively high-pressure and low temperature hydrogen to the cooled hydrogen-absorbing alloy, wherein the hydrogen-absorbing alloy is ingot-shaped and the substantially powdered hydrogen-absorbing alloy is produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume expansion caused by the hydrogen-absorbing alloy absorbing hydrogen, and wherein the substantially powdered hydrogen-absorbing alloy is transferred from the activation vessel to the hydrogen storage tank by connecting the activation vessel to the hydrogen storage tank via a ball valve disposed on the activation vessel.

35. (Previously amended) A method according to claim 34, further comprising transferring the ball valve from the activation vessel to the hydrogen storage tank when the powdered hydrogen-absorbing alloy is transferred to the hydrogen storage tank from the activation vessel.

36 and 37. (Cancelled)

38. (New) A method comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy, wherein the hydrogen gas introduced into the activation vessel has a pressure of about 0.5-10 MPa and a temperature of between about 20-60°C, and

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen.

39. (New) A method comprising:

disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel,

introducing hydrogen gas into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart, thereby forming a substantially powdered hydrogen-absorbing alloy,

transferring the substantially powdered hydrogen-absorbing alloy from the activation vessel to the hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen,

affixing a flat lid to the top of the hydrogen storage tank, thereby defining a ceiling portion of the hydrogen storage tank, after the powdered hydrogen-absorbing alloy has been transferred to the hydrogen storage tank, and

continuously supplying an inert gas to the hydrogen storage tank when the flat lid is being affixed to the hydrogen storage tank.